

WHAT IS CLAIMED IS:

1. A method of determining whether to use a RB2/p130 gene expression system or a protein encoded by the system to modulate a gene or gene expression pattern in lung cancer cells of a human test subject, the method comprising:

5 providing molecular signatures modulated by RB2/p130 for lung cancer cells, wherein the molecular signatures comprise expression products of at least one of the genes selected from the group consisting of: PCNA, MKK3, B-MYB, CCNF, 10 BUB1B, PLK, NIK, KNSL2, PCSK7, CCNB2, GPRK6, HCFC1, PFAS, DNMT1, KPNA2, STK15, TIEG, BUB1 ELK1, UMPK, PMI, CAMKK2, GSK3B, HADHSC, POLD1, NOL1, EMK1, GRP-R, XRCC3, CHK, MAGEA3/6, PPM1G, TRAF5, ABCF2, TEAD4, PIM1, CCND1, CDR2, PSMB2 and RAF1;

15 determining gene or genes expressed in the lung cancer cells of the human test subject; and

using the RB2/p130 gene expression system or the protein to modulate the gene or the gene expression pattern in the lung cancer cells of the human test subject if it is determined that the gene or genes expressed in the lung cancer cells of the human test subject are the same as the at least one of the genes.

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2. The method of claim 1 wherein the genes selected are B-MYB, PCSK7, STK15, ELK1, NOL1, MAGEA3/6, PIM1, CCND1, CDR2, and RAF1.

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3. The method of claim 1, wherein the human test subject is post-treatment for a non-small cell lung cancer.

4. The method of claim 3, wherein the treatment is selected from the group consisting of surgical operation, chemotherapy, radiation therapy and RB2/p130 gene therapy or combinations thereof.

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